AMENDMENTS TO THE CLAIMS

1.   (Currently amended)   A method of retrieving channel characteristics of a Digital
Subscriber Line (DSL) channel having a plurality of bins, comprising the steps of:

determining and storing on a per bin basis a channel frequency response measurement
and a noise ~~measurements~~ measurement measured at initialization at a first end of the DSL
channel ~~at initialization~~;

determining and storing on a per bin basis a signal-to-noise measurement measured at
show time ~~on a per bin basis~~ at the first end of the DSL channel ~~at show time~~; and

~~retrieving~~ transmitting the ~~determined~~ channel frequency response measurement, the
noise measurement and the signal-to-noise ~~measurements at~~ measurement from the first end to
a second end of the DSL channel.

2.   (Previously presented) A method as claimed in claim 1 wherein the first end is a
central office (CO) end, and the second end is a customer premise equipment (CPE) end.

3.   (Previously presented) A method as claimed in claim 1 wherein the DSL channel is
asymmetrical.

4.   (Previously presented) A method as claimed in claim 1 wherein the first end is a
customer premise equipment (CPE) end, and the second end is a central office (CO) end.

5.   (Previously presented) A method as claimed in claim 1 wherein the DSL channel is
non-overlapping.

6.   (Previously presented) A method as claimed in claim 1 wherein the DSL channel is an
Asymmetric Digital Subscriber Line (ADSL) channel.

7.   (Previously presented) A method as claimed in claim 1 wherein the DSL channel is a
very high bit-rate DSL (VDSL) channel.

8. -9.   (cancelled)

10.   (Currently amended) An apparatus for retrieving channel characteristics of a Digital

Subscriber Line (DSL) channel having a plurality of bins, the apparatus comprising:

a first circuit for determining and storing on a per bin basis a channel frequency

response measurement and a noise measurement ~~measurements~~ measured at a first end of the

DSL channel;

a second circuit for determining and storing on a per bin basis a signal-to-noise

measurement measured ~~measurement on a per bin basis~~ at the first end; and

a ~~first receiver~~ transmitter for ~~retrieving~~ transmitting the ~~stored~~ frequency response

measurement, the noise measurement and the signal-to-noise measurement ~~measurements~~ from

the first end to ~~at~~ a second end of the DSL channel.

11.   (Previously presented) An apparatus as claimed in claim 10 wherein the first end is a

central office (CO) end, and the second end is a customer premise equipment (CPE) end.

12.   (Previously presented) An apparatus as claimed in claim 10 wherein the DSL channel

is asymmetrical.

13.   (Previously presented) An apparatus as claimed in claim 10 wherein the first end is a

customer premise equipment (CPE) end, and the second end is a central office (CO) end.

14.   (Previously presented) An apparatus as claimed in claim 10 wherein the DSL channel

is non-overlapping.

15.   (Previously presented) An apparatus as claimed in claim 10 wherein the DSL channel

is an Asymmetric Digital Subscriber Line (ADSL) channel.

16.   (Previously presented) An apparatus as claimed in claim 10 wherein the DSL channel

is a very high bit-rate DSL (VDSL) channel.

17. -30. (cancelled)

31.   (Currently amended) A storage medium readable by a computer encoding a computer program for execution by the computer to carry out a method for retrieving channel characteristics of a Digital Subscriber Line (DSL) channel having a plurality of bins, the computer program comprising :

code means for determining and storing on a per bin basis a channel frequency response measurement and a noise measurements measurement measured at initialization at a first end of the DSL channel at initialization;

code means for determining and storing on a per bin basis a signal-to-noise measurement, on a per bin basis measured at show time at the first end of the DSL channel at show time; and

code means for retrieving transmitting the determined channel frequency response measurement, the noise measurement and the signal-to-noise measurement measurements from the first end to at a second end of the DSL channel.

32.   (Previously presented) A computer readable medium as claimed in claim 31 wherein the first end is a central office (CO) end, and the second end is a customer premise equipment (CPE) end.

33.   (Previously presented) A computer readable medium as claimed in claim 31 wherein the DSL channel is asymmetrical.

34.   (Previously presented) A computer readable medium as claimed in claim 31 wherein the first end is a customer premise equipment (CPE) end, and the second end is a central office (CO) end.

35.   (Previously presented) A computer readable medium as claimed in claim 31 wherein the DSL channel is non-overlapping.

36.   (Previously presented) A computer readable medium as claimed in claim 31 wherein the DSL channel is an Asymmetric Digital Subscriber Line (ADSL) channel.

37.   (Previously presented) A computer readable medium as claimed in claim 31 wherein the DSL channel is a very high bit-rate DSL (VDSL) channel.

38.   (Previously presented) The method as claimed in claim 1, wherein the DSL channel frequency response, $H_R(f)$ is represented by a normalized complex number $a(i) + jb(i)$.

39.   (Previously presented) The method as claimed in claim 1, wherein the DSL channel frequency response is referred to tip and ring of a copper loop.

40.   (Previously presented) The method as claimed in claim 1, wherein the noise measurement is referred to tip and ring of a copper loop.

41.   (Previously presented) The apparatus as claimed in claim 10, wherein the channel frequency response, $H_R(f)$ is represented by a normalized complex number $a(i) + jb(i)$.

42.   (Previously presented) The apparatus as claimed in claim 10, wherein the channel frequency response is referred to tip and ring of a copper loop.

43.   (Previously presented) The apparatus as claimed in claim 10, wherein the noise measurement is referred to tip and ring of a copper loop.

44.   (Previously presented) The method as claimed in claim 1, further comprising the step of analyzing time dependent changes in cross talk levels and line attenuation at the second end of the DSL channel.

45.   (Previously presented) The apparatus as claimed in claim 10, further comprising an analyzer at the second end for analyzing time dependent changes in cross talk levels and line attenuation.

46.   (Previously presented) The storage medium as claimed in claim 31, further comprising code means for analyzing time dependent changes in cross talk levels and line attenuation at the second end of the channel.

47.   (cancelled)

48.   (Previously presented) A method as claimed in claim 1 wherein the DSL channel is overlapping.

49.   (Previously presented) An apparatus as claimed in claim 10 wherein the DSL channel is symmetrical.

50.   (Previously presented) An apparatus as claimed in claim 10 wherein the DSL channel is overlapping.

51.   (Currently amended)   A method of retrieving channel characteristics of a Digital Subscriber Line (DSL) channel having a plurality of bins, comprising the steps of:

        determining and storing on a per bin basis channel a frequency response measurement and a noise measurement ~~measurements~~ measured at a first end of the DSL channel;

        determining and storing on a per bin basis a signal-to-noise measurement measured ~~on a per bin basis~~ at the first end of the DSL channel; and

        ~~retrieving~~ transmitting the ~~determined~~ channel frequency response measurement, the noise measurement and the signal-to-noise measurement ~~measurements~~ from the first end to ~~at~~ a second end of the DSL channel.

52.   (Currently amended) A storage medium readable by a computer encoding a computer program for execution by the computer to carry out a method for retrieving channel characteristics of a Digital Subscriber Line (DSL) channel having a plurality of bins, the computer program comprising :

        code means for determining and storing on a per bin basis a channel frequency response measurement and a noise measurement ~~measurements~~ measured at a first end of the DSL channel;

        code means for determining and storing on a per bin basis a signal-to-noise measurement measured ~~on a per bin basis~~ at the first end of the DSL channel; and

        code means for ~~retrieving~~ transmitting the ~~determined~~ channel frequency response measurement, the noise measurement and the signal-to-noise measurement ~~measurements~~ from the first end to ~~at~~ a second end of the DSL channel.

53.   (Previously presented) A method as claimed in claim 1 wherein the channel is
symmetrical.

54.   (Previously presented) A method as claimed in claim 1 wherein the channel is
overlapping.

55.   (Previously presented) An apparatus as claimed in claim 10 wherein the channel is
symmetrical.

56.   (Previously presented) An apparatus as claimed in claim 10 wherein the channel is
overlapping.